

CLAIMS

1. A step-in binding for receiving a ski boot, comprising:
 - a base constructed and arranged to be secured to the ski;
 - a pair of boot support members pivotally supported from a front side of said base, and disposed laterally on either side of said base;
 - said pair of boot support members being biased to a boot receiving position and further having a locked position that is assumed once the boot is received, engages the pair of boot support members, and is cantilevered downwardly into the locked position;
 - a cross bar disposed between the pair of boot support members for engaging the front top of the boot;
 - a release lever arranged at the front of said base readily accessible to the skier and including a member that releases the pair of boot support members from the locked position to the boot receiving position upon activation of said release lever;
 - a first member supported by said base for interlocking with the bottom of the boot; and
 - a second member for interlocking with a top of the boot.
2. A step-in binding as set forth in claim 1 wherein said base has a pressure plate on a front top surface that firmly engages an underside of the boot.
3. A step-in binding as set forth in claim 2 wherein the pressure plate is slightly elevated above the rest of the top surface of the base and said first member includes securing pins engageable in holes in the boot for retaining the boot in place.
4. A step-in binding as set forth in claim 3 including a pair of stop posts associated respectively with the pair of support members adapted to receive the front of the boot sole and for aligning the boot position with the securing pins.

5. A step-in binding as set forth in claim 1 wherein said second member includes one of a screw or ridge for engaging the top of the sole of the boot in front of the toe box.
6. A step-in binding as set forth in claim 5 wherein said screw is an adjustable set screw that engages an implanted stud in the boot sole.
7. A step-in binding as set forth in claim 1 including a cross piece extending transversely between the lateral support members at a forward position thereof and spaced rearwardly of the pivot axis of the lateral support members.
8. A step-in binding as set forth in claim 7 wherein the second member is supported by the cross piece and has a vertically disposed screw that can be adjusted to apply force to the top surface of the duckbill of the boot sole.
9. A step-in binding as set forth in claim 7 wherein the second member is supported by the cross piece and has a set screw that locks into an opposing set screw in the boot.
10. A step-in binding as set forth in claim 7 wherein the second member is supported by the cross piece and has a hooked member that locks into the upper surface of the boot sole.
11. A step-in binding as set forth in claim 1 including a ski brake integrated into the base and having wings that extend through the pair of lateral support members and a heel retention assembly supported from the rear of the lateral support members.
12. A step-in binding as set forth in claim 1 including a cross bar disposed transversely between the pair of boot support members for engaging the front top of the boot over the duckbill and the center of said cross bar receives the front of

the toe box of the boot with the ends of the cross bar extending rearwardly by a distance in a range of 0.25 to 1.75 inches.

13. A step-in binding as set forth in claim 1 including a cross bar and wherein said lateral support members extending rearwardly from the center of said cross bar by a distance in a range on the order of 2.0 to 4.5 inches.
14. A step-in binding for receiving a ski boot for skiing, comprising:
 - a center block constructed and arranged to be secured to the ski;
 - a pair of boot support members pivotally supported from a front side of said base, and disposed laterally on either side of said center block;
 - said lateral side members being tapered inwardly toward the front so as to receive and guide the ski boot as it is to be engaged;
 - said pair of boot support members being biased to a boot receiving position and further having a locked position that is assumed once the boot is received, engages the pair of boot support members, and is cantilevered downwardly into the locked position;
 - a cross bar disposed transversely between the pair of boot support members for engaging the front top of the boot over the duckbill; and
 - a release lever arranged at the front of said base readily accessible to the skier and including a member that releases the pair of boot support members from the locked position to the boot receiving position upon activation of said release lever;

the center of said cross bar receiving the front of the toe box of the boot and the ends of the cross bar extending rearwardly by a distance in a range of 0.25 to 1.75 inches.
15. A step-in binding as set forth in claim 14 wherein said center block has a pressure plate on a front top surface that firmly engages an underside of the boot, and wherein the pressure plate is slightly elevated above the rest of the top surface of

the base and includes securing pins engageable in holes in the boot for retaining the boot in place.

16. A step-in binding as set forth in claim 14 wherein a cross piece extends transversely between the lateral support members at a forward position thereof and is spaced rearwardly of the pivot axis of the lateral support members by a dimension on the order of 0.75 to 2.25 inches.
17. A step-in binding as set forth in claim 14 wherein the dimension from the cross piece to the ends of the lateral support members is on the order of 2.0 to 4.5 inches.
18. A step-in binding for receiving a ski boot, comprising:
 - a base constructed and arranged to be secured to the ski;
 - a pair of boot support members pivotally mounted from a front side of said base, disposed laterally on either side of said base and extending rearwardly;
 - said lateral side members adapted to receive and guide the ski boot as it is received;
 - said pair of boot support members being biased to a boot released position and further having a locked position that is assumed once the boot is received, engages the pair of boot support members, and is cantilevered downwardly into the locked position;
 - a cross bar disposed transversely between the pair of boot support members for engaging the front top of the boot toe box over the duckbill; and
 - a release lever mounted at the front of said base, readily accessible to the skier and including a release member that releases the pair of boot support members from the locked position to the boot released position upon activation of said release lever;
 - said lateral support members extending rearwardly from the center of said cross bar by a distance in a range on the order of 2.0 to 4.5 inches.

19. A step-in binding as set forth in claim 18 wherein the center of said cross bar receives the front of the toe box of the boot and the ends of the cross bar extending rearwardly by a distance in a range of 0.25 to 1.75 inches.
20. A step-in binding as set forth in claim 19 wherein the center of said cross bar is spaced rearwardly of the pivot axis of the lateral support members by a dimension on the order of 0.75 to 2.25 inches.